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# PHILOSOPHICAL TRANSACTIONS.

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*A summary Relation concerning the Attempts made for discovering a North-East passage. A Letter from a Spanish Professor of the Mathematicks, proposing a New place for the First Meridian, and pretending to evince the Equality of all Natural days, as also to shew a way of knowing the True place of the Moon. Some Animadversions on that Letter by an English Astronomer. An Account of two Books; I. Jacobi Barneri, Ph. & Med.D. Augustani, Prodrumus SENNERTI NOVI, &c. II. A Description of Helioscopes, and some other Instruments made by R. Hook, &c.*

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*A summary Relation of what hath been hitherto discovered in the matter of the North-East passage; communicated by a good Hand.*

IT is sufficiently known to those who have made any inspection into the Navigation of this and the former Age, how studiously and solicitously the Lords of the *United Netherlands* have, for these eighty years and more, laboured to encourage those that should first discover a more compendious and shorter passage by the *North to China, Japon*, and other Oriental Countries.

But those who first adventured upon this Enterprize, found by sad experience, that the success answered not their expectation and hopes: whose calamitous encounters I shall not go about to recite, since their own Narratives have run through most hands.

Those who immediately succeeded them in that adventure, were not much more successful for treading the same steps that the former had done, becoming involved in the same difficulties: For they were misled by an opinion, that that part of the Sea which lieth betwixt *Nova-zembla* and the Continent of *Tartary*, had been passable, and that they might have sailed through that to *China*: But it is now well known to the *Muscovites* and others, that *Nova-zembla* is no Island, but a part of *Tartary*; to the East-side whereof it is annexed by a large neck of land: Inasmuch that the arm of Sea, into which men pass through the Strait of

\* Compare herewith N. 101. of these *Tracts*, where you will find a true and full Description of the figure and position of *Nova-Zembla*.

*Weygatz*, is not truly Sea, but a Lake of fresh waters\*; the great abundance of Rivers, which out of *Asia* empty themselves into this Gulf, occasioning this Fresh; so that it is not to be counted strange, if, especially in the Winter season, these waters are strongly bound up by the frost.

Nor ought any man to wonder, why the Navigation of *William Barentz* (otherwise a well-experienced Mariner) was unsuccessful, who passed along the coast of *Nova-zembla*, as far as the seventy seventh degree of Northern-latitude: For it is well known to all that sail Northward, that most of those Northern coasts are frozen up many leagues; though in the open Sea it is not so; no nor under the Pole itself, unless by accident, as when, for example, upon the approach of the Summer, the frost breaketh, and the Ice, which was congealed near forty or fifty leagues to the shoar, breaks off from the land and floats up and down in the Sea.

This was the main obstruction to those that directed their course somewhat higher towards the North; who encountering with the vast flakes of Ice, which coming from the several shoars are driven to and fro in all parts, were forced to quit their design, and stand back for their own Country.

There was, some years since, a knot of Merchants of *Amsterdam*, who attempted those Seas with much better success than the former. For, being advanced to the seventy ninth or eightieth degree of Northern-latitude, they passed above an hundred leagues above *Nova-zembla* toward the East: And, although they gave strict

strict charge to conceal what they had seen and observed; yet it became publickly known, that they had discover'd a Sea, beyond *Nova-zembla*, free from all Ice, and very convenient for Navigation.

These being return'd to their own Country, with great hopes of finding encouragement to make further discoveries, petitioned the Lords the States General of the United Provinces, That, since they had granted the Trade of almost all the World to the Governours of the East and West-*Indian* Companies, and that there remained scarce any thing to the rest of the Merchants (who, in their opinion, had deserved as well of the Common-wealth as themselves) besides the Trade of the *Mediterranean* and *Baltick*-Seas, they would be pleased to grant the Navigation of the Northern-Seas, and of the *Eastern* (not yet discovered) to them, exclusive to the East and West-*Indian* Companies; and that so much the rather, because that, many years since, the *States* had, with the promise of great rewards, invited men to the discovery of the Northern passage to *China* and *Japon*.

But the Governours of the East-*Indian* Company being sensible, how nearly this concerned them, presented likewise their Cross-petition, desiring, that the petition of the said Merchants might for the future be referred to them and their consideration: And as for the reward, which the *States* had promised, they would take the performance of it upon themselves, and proportion it as they should see just cause.

The Merchants, finding their Petitions thus crossed, address'd themselves to the King of *Denmark*, who immediately granted their demands. Under his protection therefore they equipped two or three Ships, such as they judg'd most proper for this voyage. Which when the Governours of the *Dutch East-Indian* Company had information of, they rais'd a considerable sum of mony, and easily perswaded the Mariners to desist from so dangerous (for so they represented it) a voyage; and yet, that the Merchants might have no just cause to complain against the said Company, the Mariners went to Sea; but neglecting the directions and orders of those Merchants, they steer'd their course directly for *Spitzberg*, took in their lading of Fish, and returned home.

Upon which the East-Indian Company of the United *Netherlands* omitted neither study, nor care, to find out a passage through the North-Eastern Sea for those who were to return into *Europe* from the East-Indies.

There was then much discourse of the Gulf of *Anian*, by which a passage was said to be open into the *Tartarian* Sea: And something they understood from the people of *Japon* and the *Portugueses*, of the Country of *Jezzo* which lay above *Japon*.

But not resting satisfied with the bare relation,  
 † Compare Numb. 109, in the years 52 and 53 † sent out some dex-  
 of these *Traffs*, p. 261. trous persons to discover those coasts; who

passing beyond *Japon*, the fiftieth degree of Northern-latitude, arrived upon the coast of *Jezzo*, where they fell into a narrow Sea, yet broad and convenient enough to lead into the Northern Ocean. The opposite shoars they called *Het*

\* Which is indeed the  
 West-Corner of the Nor-  
 thern America.

*Compagnie* land \*, and an Island seated in the middle of the Gulf they called *Het Staten Eyland*. Many things are written concerning the state and condition of these Countries, and many more may be found in the Journals of the Masters of Ships and Pilots, which are industriously concealed.

Whether this Land of *Jezzo* be annexed to *Japon* or not, the Inhabitants of both Countries doubt, because vast and unaccessible Mountains interpose, which hinder the communication. Neither doth it as yet clearly appear, whether this Land of *Jezzo* be a part of *Tartary*, or whether by an arm of the Sea divided from it. The *Chineses* affirm, that *Tartary* runs three hundred *China* Leagues Eastward beyond their famous Wall: So that, if we follow these, the Country of *Jezzo* and *Japon* may seem to be annexed to *Tartary*; but those of *Jezzo* say, that there runs an arm of Sea betwixt them and *Tartary*: Which opinion may seem to receive some confirmation from what those *Hollanders* affirm, who shipwrecked some years since upon *Corœa*, a peninsule of *China*. They say, that they saw there a Whale, upon whose back stuck a Harping-Iron of *Gascony*. And the credit of this assertion not being questioned by any, it is most probably to be conjectured, that this Whale passed from *Spitzberg* through  
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the nearest arm of the Sea, rather than through the more remote. Be it how it will, we may hence safely conclude, that the Sea which lies betwixt *Japon* and *Spitzberg* is passable, and that through more perhaps than one arm or channel, by which they communicate.

But to go on: After the Experiments made by the Governours of the *East-India* Company, in the years 52 and 53, they resolved to proceed no further upon the Discovery; as well because the Emperour of *Japon* interdicted the Navigation of Forraigners into *Jezzo*, in regard (as they say) of the vast tribute which he raiseth annually upon the Silver-Mines there; as because they think, it may little conduce to their † advantage, to have this compendious way of Navigation discovered. And therefore they have thought fit to prohibit all farther search into the Navigation to *Jezzo*, and the Countries adjacent; upon which very reason they have also endeavoured to conceal their *Austral* Plantations.

† It may be more to the advantage of England.

Now concerning that tract or space, which lieth betwixt *Spitzberg*, *Nova-zembla*, and the Straights of *Jezzo*, we have no reason, for ought I see, to entertain any doubt; though not so much in regard of the passage, which the Whale above-mentioned found, (that being but a conjectural ground,) as because many of the *Muscovite* \* Itineries assure us, that the Coast of *Tartary* runs not North-ward from *Nova-zembla*, but turns up very much towards the East; so that the Head-land of *Nova-zembla* is far the most Northern part of all *Tartary*.

\* It were not amiss, for the better finding the North-East passage, to stay some years with the Russians or Muscovites in *Samojedia*, and to make a familiar acquaintance with that people, who seem to know that passage.

*fige.* Many things might be discovered in this manner, both as to *Islands* and *Terra firma*.

This may likewise be collected out of the Histories and Mapps of *China*, which affirm, that those who pass from the Wall of *China* Northward, may, in the space of fourteen days, reach the Sea. And the coast of *Tartary*, which lies beyond the *Samojedes*.

*Samojeds*, sufficiently testifieth the neighbourhood of the Sea, forasmuch as the farther any man advanceth towards the East, the milder and better cultivated all things appear to him: For the *Muscovites* have there observed large and navigable Rivers, and fair Cities abounding with plenty of all manner of things.

It remains now, that we should enquire, by what Course, and in what Season of the year this Voyage is chiefly to be undertaken? It is hardly to be doubted, but that the Strait which lies betwixt *Spitzberg* and *Nova-zembla* may be passed; and the course is to be directed to seventy eighth, seventy ninth, and even to the eightieth degree of Northern latitude. If any man shall, holding the same course, proceed farther, he will find the passage shorter; for, if we draw a line to pass from our Seas through the seventy eighth or seventy ninth degree of Latitude to the Strait of *Jezzo*, it will be very near a streight line: But if any would from the same degree of Latitude (having passed *Nova-zembla*) chuse to decline toward the coast of *Tartary*, and coast along by it, till he meet with some Strait, he would find his Course somewhat longer, but peradventure safer and better; since many Straights would seasonably present themselves to him; and he might safely neglect the measure of Longitude, which in open Seas (and especially those that are near the Pole) is found difficult to be observed. Neither ought this to be any hindrance, but that the other way may be frequented; for, though in places near the Pole, the moments of Longitude have great variety in a little space, yet there ariseth not any great difficulty from thence; since the fault may easily be prevented in lesser Circles: For grant, that any Mariner in the observation of his Longitude should mistake a whole quarter of the Compass (which may easily fall out in one daies sayling,) there could no great inconvenience follow; since the mistake, in regard of the shorter spaces of Longitude, may be rectified in a lesser interval: Nor is there any man that knows not, that the Parallel circles, the nearer they are to the Pole, the more they are contracted, till they all end in one point; so that the Errour cannot be very great, wick falls out in Longitudes so contracted.

As to the Time of the year, wherein this Navigation ought to begin, it may be considered two ways: In the beginning of the Spring, *viz.* in the month of *March*, it is confessed by most men, that the Winds and Seas are favourable to those that sayl to *Spitzberg*, and the places near the Pole, and that they may run all that course from these parts in twelve or thirteen daies space: But when they have passed so far, if any man would design to sayl to the Straights of *Jezzo*, he must steer his Course towards the South: But then those motions of the Winds and Seas, which were favourable to those who sayled Northward, will be contrary to those who stand Southward, and they may long enough expect Northern gales, which seldom blow till towards the latter end of Summer, *viz.* in the month of *August*. If therefore any man would contrive to dispatch his voyage in the shortest time, it were his safest rule to make choice of that time of year, wherein he might soonest make to *Spitzberg* to and again, which I conceive would be in the beginning of Summer; yet it would be safer to set out sooner, if the Wind permit. And although this Course should happily succeed, it follows not, that I should advise them to observe the same in their return homeward; for, things of that nature must be left to the prudence and conduct of discreet Pilots and Mariners; who are yet to be advertised, that, since the greatest part of this Navigation is to be sought through unknown Seas, they shun, as much as in them lieth, all near approach to the Coasts and Islands which they shall encounter, for fear of the Ice; and that they always make choice of the most open Seas, which are least infested with it, and in which the Colds are most moderate. For, experience hath sufficiently taught, that whole large Seas are never known to be frozen, but the borders of the Seas near land only, and these by reason of the plenty of *fresh* waters that run into the Ocean, or the Snows melted in it. And the same experience hath taught, that there is not that danger from the fluctuating Ice as is vulgarly apprehended, especially in Seas not subject to violent storms, and within the sixth or rather the eight month of the year.



But in case that frequent Lands and Islands are to be pass'd , it will be the safer course to chuse the largest and most open Channels, and not to sayl near the sides that lie to the North , but to chuse rather the Southern shoars, which are seldom, or at least not so much, pester'd with Ice.

When the nature of this Sea and of its several Straights shall be more perfectly discover'd, it is not to be doubted, but that the whole Voyage betwixt Us and *Japon* may be performed in the space of five or six weeks, at the most. But in case it should, either by accident or gross error, so fall out, that the Ships should be forced to winter there before they could recover home, this likewise might be done without much danger ; provided that they avoided the unadvised proceeding of the *Dutch* , who being caught, and necessitated to pass the winter in the most Northern Climats, planted themselves there upon the highest lands, in Hutts fram'd of thin boards, (whereas in *Lapland* it self it is impossible to live so;) but they ought to sink their houses under ground, and to heap much earth over them ; since 'tis not possible, or, at least, extreamly difficult for men to subsist in such an excessive severity of Winter , unless they nest themselves deep under the Earth.